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Biotechnology Notes

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Biotechnology Notes, a compilation of agency activities, news events, and upcoming meetings, is prepared for members of the U.S. Department of Agriculture's (USDA) Committee on Biotechnology in Agriculture (CBA) by USDA's Office of Agricultural Biotechnology (OAB).

INSIDE USDA

APHIS DEREGULATES COTTON; CORN MAY BE NEXT

USDA's Animal and Plant Health Inspection Service (APHIS) has announced that certain lines of genetically engineered cotton are no longer regulated by USDA, based on positive data reports from field tests and other scientific data. This means the cotton is no longer regulated under APHIS' regulations and therefore can be field tested, imported, or moved interstate without first notifying USDA. The cotton lines in question, designated as lines 1445 and 1698, were developed by Monsanto Co. to tolerate the herbicide glyphosate, commonly known as Roundup®.

In other regulatory news, APHIS has received a petition from the Dekalb Genetics Corporation requesting nonregulated status for a corn line designated as B16 that has been genetically engineered to tolerate the herbicide glufosinate. This corn line was modified with the herbicide-resistant gene isolated from a soil-inhabiting microorganism. The gene was introduced into the corn line by microprojectile bombardment. The Environmental Protection Agency is reviewing the use of this herbicide on the genetically engineered corn. The public has until October 2 to send in written comments concerning the petition. To receive a copy, please call Kay Peterson at 301-734-7601.

NEWS AROUND THE NATION (AND THE WORLD)

PROGRESS CONTINUES ON ARABIDOPSIS PROJECT

The fourth report issued recently by the National Science Foundation on the status of the multinational *Arabidopsis* genome project lists many new areas of scientific breakthrough, such as progress in understanding plant hormones, plant development, how plants

perceive and respond to light, and how they defend themselves against bacterial attack. Major advances were made in the genetic and physical maps of chromosomes and a systematic gene sequencing effort was begun.

The project started in 1990. It is an international effort whose goal is to understand the physiology, biochemistry, growth, and development of a flowering plant. Scientists use *Arabidopsis thaliana* (a mustard plant) as their working model because of the relatively small size of its genome. To receive a copy of "The Multinational Coordinated *Arabidopsis Thaliana* Genome Research Project Progress Report: Year Four," please call 703-306-1130 and ask for publication number NSF 5-43.

SOWING YOUR WILD OAT (OIL)

Normally, food processors don't use the oil from dehulled oats because there is so little to be extracted (only 5%). But now researchers at Iowa State University (ISU) have developed oat lines containing enough oil to make oats competitive with other oilseed crops such as canola and sunflower.

Using genes from weedy oat plants which were obtained using traditional plant breeding practices, the researchers developed a population of oat lines containing 15-17% oil in the dehulled seed. The residue of defatted oat flour can be used as a primary product for the food industry.

ISU is seeking industrial partners to develop and commercialize the oat oil. Anyone interested in the project should write to the Office of Intellectual Property and Technology Transfer, 214 Office and Laboratory Bldg., ISU, Ames, Iowa 50011; or call 515-294-3893; Fax: 515-294-0778; E-mail: licensing@iastate.edu. Please cite ISURF 01977.

HOW THE PUBLIC VIEWS GENETIC ENGINEERING

In a 20-minute telephone survey of 600 people in New Jersey, 25 percent said they could not think of anything when asked the question: What is the first thought or image that comes to mind when you hear the term "genetic engineering"? About 12 percent mentioned science and technology and 10 percent responded with images of test-tube babies and cloning. More than one in five responded negatively, 4 percent positively.

Although most respondents said they had an adequate science education, about 40 percent said they don't approve of crossbreeding to create hybrid plants, while one in five thinks crossbreeding is morally wrong. However, those individuals who are skeptical about genetic engineering say they would be "very willing to buy the products . . . if they had specific health or environmental benefits or could save consumers time and money."

According to William Hallman and Jennifer Metcalf who collected and analyzed the data and reported their findings in the July issue of *Genetic Engineering News*, several conclusions can be drawn. First, consumers have not given genetic engineering much thought, despite extensive media attention. Second, neither the proponents of biotechnology nor the naysayers seem to have had much influence on public opinion. Third, efforts to communicate successfully to consumers must take into account the vast differences between the knowledge of experts and that of the consuming public.

FIRST ANNOUNCEMENT: PLANT WORKSHOPS

Zeneca Plant Science and Rhone Poulenc in collaboration with *The Plant Journal* are sponsoring a series of plant workshops, May 27-June 1, 1996, in Arc et Senans, France. Both young researchers and established leaders in a field of study will explore a subject in-depth from very different disciplines, review recent advances, and define future opportunities in plant research. For details, please contact Louise Dewhurst, IFAB Communications, Department of Biology, University of York, P.O. Box 373, York, Y01 5YW, UK; or call 44-0-1904-432920; Fax: 44-0-1904-433029.

1996 WORLD CONGRESS MEETING; DEADLINE FOR ABSTRACTS

San Francisco, CA is the venue for the 1996 meeting of the World Congress on In Vitro Biology (formerly the Tissue Culture Association). The meeting is entitled "Biotechnology: From Fundamental Concepts to Reality," and takes place June 22-26. There will be a trade show exhibition June 23-25, numerous presentations on plants, and a special joint workshop on patent rights and biotechnology transfer. The deadline for submitting abstracts is January 12, 1996. For more details, please call 410-992-0946; Fax: 410-992-0949.

SQUEEZE THE HAM, NOT THE TOMATOES

Porcine somatotropin (pST), a genetically engineered growth hormone for pigs, has been approved by Australian regulatory authorities and will soon be commercially available, according to the August issue of *The AgBiotech Bulletin*, a Canadian publication. Injections of pST will result in bigger muscles and less flab.

While the pigs are busy pumping up their glutes, it has been reported that Calgene's Flavr Savr® tomato is getting bumped and jostled. It seems that packing and shipping problems have caused the tomatoes to bruise and thus delayed their arrival at the grocery stores. The company is involved in overhauling its packing methods.

BIOTECHNOLOGY ON CAMPUS

This is the seventh in a series of articles profiling biotechnology programs at U.S. colleges and universities. This month we visit Colorado State University's (CSU) Plant Biotechnology Program in Ft. Collins, CO.

The Plant Biotechnology Program at CSU is multi-disciplinary and involves 22 scientists and 12 graduate students in eight different departments and four colleges and two USDA research laboratories.

Faculty and students use basic and applied research to improve those crops grown in Colorado. Crop stresses due to biological and physical factors, such as climate, are key to the program's mission. A few examples of the research include molecular-based genome mapping of barley, potato, and tomato; PCR-based finger printing of peppermint and spearmint; signal transduction mechanisms; regulation of gene expression; transfer of stress resistance genes to potato, strawberry, and African Violet; and natural product pesticide development. Funding for projects comes from a variety of sources including USDA's National Research Initiative, the Colorado Agricultural Experiment Station, the Colorado RNA Center, and NASA. The program actively pursues interactions and partnerships with industry and producer groups. For more information, please write to Cecil Stushnoff, Director, Plant Biotechnology Program, 113b Shapardson, CSU, Fort Collins, CO 80523.

BIOTECHNOLOGY EDUCATION

USDA's Office of Agricultural Biotechnology and the Iowa State University Extension Service is helping to sponsor a national symposium on "Extension's Role in Biotechnology Education," October 20-23, 1996 in Ames, Iowa. Workshop proposals are due by March 31, 1996. For more details, please call Deborah Curry at 515-294-8417; Fax: 515-294-1047.

BIOSAFETY SYMPOSIUM PANEL SESSIONS

The "4th International Symposium on the Biosafety Results of Field Tests of Genetically Modified Plants and Microorganisms," taking place in Japan July 14-18, 1996, will include the following six panel sessions:

Panel:

- 1 New research techniques and diagnostic tools for biosafety evaluations (new methods to conduct biosafety evaluations)

- 2 Field experience using microorganisms as bioindicators, biosensors, or biomonitor
- 3 Emerging biosafety field testing capacity/capabilities in developing countries
- 4 Agronomic and food products in the marketplace -- lessons learned
- 5 Defining unique science issues in biosafety risk assessment (unique emerging scientific issues)
- 6 International harmonization of biosafety issues

A call for papers will be announced soon and publicized in *Biotechnology Notes*.

IN CASE YOU WEREN'T THERE

- OAB Director Alvin Young met with the research community in Uruguay, South America, last month to discuss areas of collaboration and technology transfer and to deliver the keynote address at the dedication of a new biotechnology laboratory in Las Brujas. His presentation was "Agricultural Biotechnology: Challenges for the Transfer and the Interchange of New Technologies." He said a nation can capitalize on the new technology as long as it is willing to invest in funding for basic research, develop a regulatory framework, educate scientists, communicate with the public, and provide a process for transferring the technology from the laboratory to industry. The conference was sponsored by Uruguay's National Institute of Agriculture, which helps to promote the use of biotechnology to improve forage crops, reproduction, and meat quality.

NEW PUBLICATIONS

- "Biotechnology and Potential Nutritional Implications for Children," in *Pediatric Clinics of North America: Pediatric Nutrition*, August 1995. Co-authored by Alvin Young and Charles Lewis.

- *Post-Emergence Herbicides*. Published by Agrow Reports. July 1995. To order, please write to Agrow Reports, 18/20 Hill Rise, Richmond, Surrey TW10 6UA, UK.
- *Investment Opportunities in China: Emphasizing Biotechnology, Drugs, Agriculture, and Food and Chemicals*. Published by BCC Inc., Norwalk, CT. January 1995. To order, please call 203-853-4266.
- *The Language of Biotechnology, Second Edition*. Edited by M. Cox and J. Walker. Published by the American Chemical Society, Washington, DC, July 1995. To order, please call either 202-872-4600 or 800-ACS-5558.
- *Biorational Pest Control Agents: Formulation and Delivery*. Edited by F. R. Hall and J. W. Barry. Published by the American Chemical Society, Washington, DC, May 1995. To order, please call either 202-872-4600 or 800-ACS-5558.
- "Biotechnology in the Service of the Developing World," by C. J. Arntzen, in Center for Biotechnology Policy and Ethics newsletter, published by Texas A&M University, July/August 1995. To subscribe, please call 409-845-5434; Fax: 409-847-9372.
- *Probe: Newsletter of the USDA Plant Genome Research Program*. Volume 5, No. 1. Feature article on edible vaccines. To receive a copy, please call Susan McCarthy at 301-504-6614; Fax: 301-504-7098; E-mail: smccarth@nalusda.gov
- *Food Biotechnology: A Monograph*. Published by ILSI Press, 1995. To order, please write to ILSI Press, 1126 16th St., NW, Washington, DC 20036-4804 and ask for publication 398626.
- *Genetically Modified Foods: Safety Aspects*. Edited by K.H. Engel, G. R. Takeoka, and R. Teranishi, 1995. Published by the American Chemical Society, Washington, DC.

UPCOMING MEETINGS

Sept. 11-12: 44th Annual Meeting of ARI. "Food and Fiber Production Strategies for the 21st Century." Bethesda, MD. Sponsored by ARI. For details, please call 301-530-7122.

Sept. 13-14: The European Biotechnology Symposium '95. Amsterdam, The Netherlands. For details, please call 301-652-3072; Fax: 301-652-4951.

Sept. 13-14: Global Regulatory Strategies for the U.S. Pharmaceutical and Biotechnology Industries. Washington, DC. Sponsored by the Institute for International Research. Please call 212-661-8740 for more information.

Sept. 21-22: The Art of Antisense. New Orleans, LA. Conference sponsored by Nature Medicine. For more information, please write to Diana Berger, Conference Services Manager, Nature America Inc., 345 Park Avenue South, New York NY 10010-1707.

Oct. 1-4: International Symposium on "Engineering Plants for Commercial Products/Applications." Lexington, KY. Sponsored by the University of Kentucky. For details, please call 606-257-3929; Fax: 606-323-1053; E-mail: monica.stoch@ukwang.uky.edu

Oct. 2-3: Canadian University/Crown Labs/Industry Technology Transfer Conference. Montreal, Quebec, Canada. Sponsored by Technology Transfer Conferences Inc. The entire conference centers around university/lab-to-company and company-to-university/lab interaction and contacts for the future. For more details, please call 615-366-0679; Fax: 615-366-0695.

Oct. 10-12: BioTechnica. International trade fair for biotechnology. Hannover, Germany. Call 416-364-5352; Fax: 416-364-6557. Anyone wishing to participate as an exhibitor, please call G. P. Gwaltney at 703-922-4669; Fax: 703-971-4588.

Oct. 16-20: Biotechnology Colloquium. Saskatoon, Saskatchewan, Canada. The colloquium is part of the North American Plant Protection Organization Annual Meeting. Sponsors include Agriculture and Agri-Food Canada and Ag-West Biotech Inc. For more details, please call Jane Thibert at 613-952-8000; Fax: 613-952-0809.

Oct. 17: "Safety of Transgenic Crops: Environmental and Agricultural Considerations." Basel, Switzerland. Meeting organized by the Basel Forum on Biosafety. For details, please call 41-61-6909312; E-mail: kaeppeli@ubaclu.unibas.ch

Oct. 22-25: "International Symposium on Swine in Biomedical Research." College Park, MD. Partly sponsored by the University of Minnesota. For details, please send a fax to 612-624-7284; E-mail: pigmodel@gold.tc.umn.edu

Oct. 23-25: BioWest '95. San Francisco, CA. Sponsored by BioConferences International Inc. Call 301-652-3072; Fax: 301-652-4951.

Oct. 25-28: "Louis Pasteur and Industry in the 21st Century." Marnes-la-Coquette, France. For details, please write to Institut Pasteur, Anne Bellod, 28 rue de Dr Roux, 75724, Paris Cedex 15; or call 33-1-4061-3380; Fax: 33-1-4061-3381.

Nov. 9-10: "Biotechnology Symposium." Tallahassee, FL. Sponsored by Florida A&M University's College of Engineering Sciences. For details, please contact Mehboob B. Sheikh at 904-561-2219.

Nov. 13-15: Pacific Rim University/Industry Technology Transfer Conference. Los Angeles, CA. Sponsored by Technology Transfer Conferences Inc. For details, please call 615-366-0679; Fax: 615-366-0695.

Nov. 13-18: Biotecnologia Habana '95. Havana, Cuba. For details, please write to Biotecnologia Habana '95, P.O. Box 6162, Havana 10600, Ave. 31 entre 158 y 190, Cubanacan, Cuba; E-mail: biot95@ingen.ciqb.edu.cu

Dec. 17-22: "Biotechnology of Foods and Flavors." A symposium at the PACIFICHEM '95 Congress. Honolulu, Hawaii. Registration information is in *Chemical and Engineering News*, July 10, 1995.

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